

Listing of Claims:

1. (Currently amended) A semiconductor chip which emits electromagnetic radiation, comprising:

an epitaxially produced semiconductor layer stack based on a nitride semiconductor material, which includes an n-conducting semiconductor layer, a p-conducting semiconductor layer and an electromagnetic radiation generating region which is arranged between said n-conducting and p-conducting semiconductor layers;

a base, on which the semiconductor layer stack is arranged; and

a mirror layer, which is arranged between the semiconductor layer stack and the base and reflects electromagnetic radiation emitted by the semiconductor layer stack in a direction of the base,

wherein the mirror layer has a plurality of planar reflection sub-surfaces, which are positioned obliquely with respect to a main plane of the electromagnetic radiation-generating region and each form an angle of between 10° and 50° with respect to the main plane[.], and

wherein the p-conducting semiconductor layer faces the base, and the mirror layer is comprised of a reflection surface of the p-conducting semiconductor layer, which includes the plurality of planar sub-surfaces which are positioned obliquely with respect to the main plane of the electromagnetic radiation-generating region and each form the angle of between 10° and 50° with respect to the main plane

2 - 5. (Canceled)

6. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 1, wherein the reflection sub-surfaces form pyramid-like structures.

7. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 1, wherein the mirror layer includes a plurality of different layers.

8. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 1, wherein the mirror layer comprises a highly reflective layer, and at least one of a protective layer, and a joining layer.

9. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 8, wherein the highly reflective layer contains silver or aluminum.

10. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 8, wherein the protective layer contains titanium nitride.

11. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 8, wherein the joining layer contains at least one of gold, tin and an alloy of these metals.

12. (Canceled)

13. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 1, wherein the semiconductor layer stack includes at least one trench which defines a plurality of individual semiconductor layer elements.

14. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 13, comprising a plurality of trenches extending such that the semiconductor layer elements, in plan view, are in the shape of one of a circle, a hexagon, a quadrilateral, a triangle or a combination of these shapes.

15. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 13, wherein the semiconductor layer elements each have a diameter or a width which includes at most ten pyramid-like structures.

16. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 13, wherein the at least one trench is at least sufficiently deep so as to at least isolate the radiation-generating region.

17. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 13, wherein a width of the at least one trench is at least double a depth of the at least one trench.

18. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 13, wherein the at least one trench is filled with an electrically insulating material which transmits radiation generated by the radiation-generating region.

19. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to claim 1, comprising a radiation-transmitting electrically conductive contact layer arranged on the n-conducting semiconductor layer.

20. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 19, wherein the contact layer contains at least one of indium tin oxide and ZnO.

21. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 1, wherein the semiconductor chip does not contain a growth substrate.

22. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 1, wherein the p-conducting semiconductor layer is doped with magnesium.

23. (Previously presented) The semiconductor chip which emits electromagnetic radiation according to Claim 1, wherein the base contains gallium arsenide or copper.

24 - 45. (Canceled)